7. Opus

corrected

Program Name: Opus.java **Input File: opus.dat**

The Firethorne High School Computer Science Club is sponsoring an invitational computer science competition to raise money to pay for much needed compute time on The University of Texas' super computer Stampede. The invitational will be just like all other UIL competitions in that there will be a programming portion and a written exam. The club sponsor, Mr. Snigglefritz, has asked Opus to help out with grading the written portion of the contest. Each contestants name, name of their school, school's classification (1A, 2A, etc.) and their answers to the 40 written exam questions will be scanned into a file along with the key to the exam. Opus must write a program that will read and score each contestant' s answers. It must then print a report that separates the contestants by school classification and ranks them based on their score on the test.

The usual UIL scoring methods will be used. Contestants will earn 6 points for a correct answer, lose 2 points for an incorrect answer and 0 points for any question that is skipped. Ties will be broken using percentage correct **based on number of questions answered**. The student with the greatest percent correct will win the tie.

Input: The first line of the data file will be the word KEY followed by 40 letters A through E that represent the correct answers to the written exam each separated by a space. Next will be several lines of data each containing the following: first name, last name, school name (all will be one word), school classification and 40 capital letters A through E or an S if the question has been skipped. Each of the data items will be separated by a single space.

Output: A report that shows the results of the competition. The report should be grouped by school classification from 1A to 6A. Within each classification the contestants should be listed in descending order based on their test score each on a separate line. For each contestant show their placing, last name followed by a comma, their first name, their school's name, and their score on the exam. All items should be separated by a single space.

Ties should be broken and displayed in the correct order with correct place. The tie breaker goes to the student with a higher percentage of correct answers. If two students have the same score and same percentage of correct answers, the tie is considered to be unbreakable. Unbreakable ties should be shown as having the same place and in alphabetical order based on last name, then first name. The next place after an unbreakable tie should reflect the same place, not the next place. For example, if there is an unbreakable tie for first place, list both contestants as first and then list the next contestant as third place, not second.

Sample input:

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KEY A E C B C B D C A E A C E B D E C D A C E C C B C D E E A C A B B B D B C D A D
Sebastian Williams Channing 1A A E C B C E D C E E E C E C E E C E A C E C D A B S S B A C A B E A D B C C E S
Alexander Taylor Gorman 1A A A S B A S D B S E C S E C S E D S A D E C B S C A E B B C A B S B B S C B S D
Jose Rodriguez Shamrock 1A S E C B C B D S A E E B C C D E C C A A A S E B B D E C A S S A E D D E S B A E
Angel Harris Rusk 4A A E D D C E B C C E A C A A B E A B B C E E B C D A A C A A D A B B C C E D A A
Sofia King Odessa 6A A E C B C B C C B E A C E C D B S B D S C D S D C E A C E S D D S B E S D D S S
Aria Morris Frost 2A C C C C C C C C C S S S S S S S S S S C C C C C C C C C C C C C C C C C C C C C C
Jacob Miller Zapata 4A A A D E E B B D B B E A B B D E C A E E E C C B A A D C C B C C D E E D C E E B
Michael Martinez Frost 2A A E D B E B D C A E E B D C D E E C A C B C C S C C S E B S D S S S S B C S A S
Emily Adams Alvin 6A A E C B C B D B A E E C E C D E C C A C E C D B C D E C A C A E E B C S S S S S S
Isaac Robinson Alvin 6A C E C A D B B C E E E B E B D E C A A D E A D E C A E C A D A A E E D C C A A A
Dylan Lopez Tulia 3A C A A B E E A B B C E D D B D B C C E D C E B D C B D D A B E E E D A D C B B D
Camila Green Poolville 2A A E C A C B D C A D E C E C D E C C A C E C D B C D S B S S A E E B D B S E A D
Penelope Stewart Van 4A D E C B C B D C C B E C E C D E C D E C E C D E C D E D A C A S E B S B C E A D
David Wilson Rusk 4A A E C B C B D C A E E C E C E E C C A C B D B E S C C E B A S C B E S E C S E C
Scarlett Turner Junction 2A A E D B E B D C A E E B D C D E E C A C B C C S C C S E B S D S S S S B C S A S
Jayden Jackson Poolville 2A A E C B C B D C A E E C E C D E C C A C E E A D E A D E D D C C D D B C C D B S
Elijah Davis Lasara 2A C E C B C B E C A E E C E C E E C E A C S C D S C D E E A C A B S S C D C B E A
Abigail Baker Lamesa 4A C C E C C B E B A E E C E D E S B C S S S S S S C C C S S S S S S S S S S S S S S
Natalie Flores Marfa 1A A E C B C B D C A E E C E C D S S S S S S S S S S S S A A A A A S S S S S S S S S
Luke White Poolville 2A A E C B C B D A A E E C E C D S S S S S S S S S S S S S S S S S E E E E S S S S S
James Martin Hooks 3A A E C B C D D C C E E C E A D S B S S S E S S S S D E S S S S C E E S S S S S D
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Opus - continued
Sample output:

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1A
1 Williams, Sebastian - Channing: 110
2 Flores, Natalie - Marfa: 80
3 Taylor, Alexander - Gorman: 76
4 Rodriguez, Jose - Shamrock: 76
2A
1 Green, Camila - Poolville: 136
2 Davis, Elijah - Lasara: 120
3 Martinez, Michael - Frost: 90
3 Turner, Scarlett - Junction: 90
5 Jackson, Jayden - Poolville: 90
6 White, Luke - Poolville: 58
7 Morris, Aria - Frost: 12
3A
1 Martin, James - Hooks: 74
2 Lopez, Dylan - Tulia: -16
4A
1 Stewart, Penelope - Van: 140
2 Wilson, David - Rusk: 80
3 Harris, Angel - Rusk: 40
4 Baker, Abigail - Lamesa: 16
5 Miller, Jacob - Zapata: 8
6A
1 Adams, Emily - Alvin: 138
2 Robinson, Isaac - Alvin: 72
3 King, Sofia - Odessa: 56
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